

I claim:

1. A method for repairing a defect in living mammalian tissue comprising:

covering a tissue defect and surrounding tissue with a prosthetic by placing said prosthetic over said defect and against said surrounding tissue; and

applying a surgical adhesive to said prosthetic on said surrounding tissue on at least one location on said prosthetic and said surrounding tissue to permit surrounding tissue and said prosthetic adhere to each other.

2. The method as recited in claim 1, including:

applying said adhesive onto said prosthetic at several locations on said prosthetic and onto said surrounding tissue.

3. The method as recited in claim 1, including:

applying said adhesive onto said prosthetic in situ through an endoscope.

4. The method as recited in claim 1, wherein said adhesive comprises a cyanoacrylate-based adhesive.

5. The method as recited in claim 1, wherein said adhesive comprises a fibrin-based adhesive.
6. The method as recited in claim 1, wherein said adhesive comprises a polyurethane-based adhesive.
7. The method as recited in claim 6, in which said polyurethane-based adhesive includes a foaming agent added to produce an open cell geometry upon curing in situ to promote tissue in growth.
8. The method as recited in claim 1, wherein said adhesive comprises a polyisocyanate-based adhesive.
9. The method as recited in claim 1, including:  
applying a light crosslinked albumin solder to said prosthetic.
10. The method as recited in claim 1, wherein the said prosthetic is an absorbable collagen material.

11. The method as recited in claim 1, wherein the said prosthetic is formed of a material selected from the group consisting of: polytetrafluorethylene or a fibrotic polypropylene stimulator material.

12. The method as recited in claim 1, wherein said defect is an inguinal hernia.

13. The method as recited in claim 1, including:

placing at least one absorbent pad on said tissue;

delivering said adhesive onto said absorbent pad on said tissue; and

suturing adsorbent pad to said prosthetic.

14. A method for repairing a defect in living mammalian tissue comprising:

attaching a syringe to a catheter;

delivering a surgical adhesive through said catheter from said syringe to said tissue defect in a mammal, and

covering said tissue defect and surrounding tissue with said surgical adhesive, said surgical adhesive being mixed with a plurality of filaments of a second solid substance so that when said adhesive cures to

said tissue said second solid provides a randomized matrix fully encapsulated by said adhesive.

15. The method as recited in claim 14 in which said filaments of said second solid are selected from the group comprised of polypropylene or e-PTFE measuring between 100 and 500 microns in length and between 25 and 100 microns in diameter, said filaments being mixed with said adhesive prior to application in a filament to adhesive volume ratio of about 1:10 to 1:2.

16. The method as recited in claim 15 including:

mixing a portion of collagen spheres measuring between 100 and 500 microns in diameter with said adhesive prior to application onto said tissue, said spheres to adhesive mixed in a ratio of about 1:10 to 1:2.

17. The method as recited in claim 1, wherein said prosthetic comprises a mesh patch having at least one absorbent pad for delivering said adhesive and for forming a bond between said absorbent pad bearing said adhesive and said tissue.

18. An implantable prosthesis for repairing a tissue or muscle wall defect in a comprising:

a flexible porous plug arranged to retain a surgical adhesive for creating a tissue bond, said plug arranged to fit within and occlude a tissue or muscle wall defect wherein at least a portion of said flexible plug includes a cavity which permits delivery of an additional adhesive into said plug so that said plug conforms to any irregularities in said tissue or muscle wall defining the defect to form a cured solid plug of adhesive and a flexible plug, said flexible plug being compressible radially upon insertion into the defect from a first configuration which is larger than the defect to a second configuration which closely approximates the shape of the defect.

19. The prosthesis of claim 18 in which said flexible plug is comprised of a cone of foamed and cured surgical adhesive within which an uncured adhesive is disposed.

20. The prosthesis of claim 18 wherein said plug includes a closed rounded first end, and an open second end and a cavity extending therebetween, said cavity arranged to receive a volume of surgical adhesive which

stiffens said implantable prosthesis when said plug is compressed into said configuration and bonds to the surrounding tissue.

21. The prosthesis of claim 18 where in said flexible plug includes a plurality of mesh petals.

22. A tissue defect repair patch for implanting within a patient, comprising:

at least one first layer of inert synthetic mesh material sized and shaped to extend across and beyond a tissue aperture in a patient;

a resilient support member adjacent a periphery of said first layer for creating tension in said first layer, said support member being carried by said first layer so as to remain implanted with said first layer in the patient;

said first layer of inert synthetic mesh material having a periphery extending beyond said support member to define a border which has a free outer edge to fill uneven voids in a patient's tissue.

said first layer of inert synthetic mesh material having a surgical adhesive impregnated between interstices of said first layer to effect a bond between mesh and tissue.

23.A tissue defect repair patch for implanting within a patient, comprising:

at least one layer of flexible, inert synthetic non-porous sheet sized and shaped to extend across and beyond a tissue aperture in a patient;

a resilient support member adjacent a periphery of the layer for creating tension in the layer, the support member being carried by the layer so as to remain implanted with the layer in the patient; and the layer of inert synthetic sheet having a periphery extending beyond the support member, defining a border which has a free outer edge to fill uneven voids in a patient's tissue; and the layer of inert synthetic sheet having a surgical adhesive coating the sheet to effect a bond between mesh and tissue.

24.The sheet of claim 22 comprised of a first substance encapsulating a surgical adhesive, such that when pressure is applied the encapsulated surgical adhesive is ejected from the encapsulation sites to effect a bond between the ruptured cell structure and tissue.

25.A plug formed from a non-porous inflatable structure of conical geometry, in which surgical adhesive is injected to form an inflatable structure to fill a tissue defect in mammalian tissue, the inflatable structure allowing for permeation of fluids into its interior, thus effecting a cure of the surgical adhesive.

26.A plug formed from a porous inflatable structure of conical geometry, in which surgical adhesive is injected to form the inflatable structure to fill a defect, the porosity of the inflatable structure such that adhesive slowly flows from the surface, such porosity being between 25-50 microns for a surgical adhesive with a viscosity of 3000 cps, said adhesive effecting a bond between said plug and said tissue, said inflatable structure allowing for permeation of fluids into its interior, thus effecting a cure of said surgical adhesive.

27.The plug of claim 26 in which the porosity of said inflatable structure is matched to the viscosity of the surgical adhesive to effect a slow elusion of adhesive into contact with said mammalian tissue.